

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-236288

(43)Date of publication of application : 31.08.2001

(51)Int.Cl.

G06F 13/00

H04L 12/66

H04L 29/08

(21)Application number : 2000-047671

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(22)Date of filing : 24.02.2000

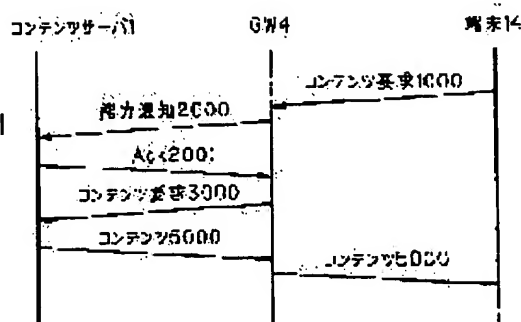
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(54) CONTENTS DISTRIBUTING SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To distribute contents suitable for terminal capabilities by specifying the terminal capabilities without making terminal equipment perform processing to notify the terminal capabilities.

SOLUTION: A terminal 14 notifies a contents request 1,000 through an LAN 8 to a GW device 4. The contents request 1,000 includes information for specifying a contents server device 1, information for specifying contents on the contents server device 1, and information for specifying the terminal 14. On receiving the contents request 1,000 from the terminal 14, the GW device 4 analyzes the contents request 1,000, and analyzes the information for specifying the contents server device 1, and notifies capability notification 2000 through a trunk communication line 3 to the contents server device 1. Thus, the contents server device 1 transmits contents 5,000 suitable for the terminal 14.



LEGAL STATUS

[Date of request for examination]

12.07.2002

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the
examiner's decision of rejection or application converted
registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of
rejection][Date of requesting appeal against examiner's decision
of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]

[Claim 1] The contents distribution system which consists of the contents server equipment which is characterized by providing the following, and which becomes the distribution origin of the contents connected to the trunk communications line, a gateway unit linked to a trunk communications line and a Local Area Network, and two or more terminal units connected to the Local Area Network, and distributes contents to two or more terminal units via a trunk communications line, a gateway unit, and a Local Area Network from contents server equipment. The aforementioned gateway unit is a capacity specification means to specify the clearance capacity of the aforementioned terminal unit. It is a distribution means to be equipped with a notice means to notify this clearance capacity to contents server equipment, and for the aforementioned contents server equipment to choose the contents which suited this clearance capacity by the aforementioned clearance capacity notified from the aforementioned gateway unit, and to distribute.

[Claim 2] It is the contents distribution system according to claim 1 which the aforementioned gateway unit is equipped with a means to memorize the clearance capacity of the terminal corresponding to the IP address and this IP address which can specify a terminal within a Local Area Network, and is characterized by the aforementioned capacity specification means specifying clearance capacity using the information memorized by the pre-storage means based on the aforementioned IP address sent from the terminal unit.

[Claim 3] The aforementioned terminal unit is the contents distribution system of the claim 2 characterized by having a means to register the aforementioned IP address and the aforementioned clearance capacity into the aforementioned storage means.

[Claim 4] It is the contents distribution system according to claim 1 which the aforementioned gateway unit is equipped with a means to memorize the connection port assigned according to clearance capacity, and the aforementioned clearance capacity corresponding to this connection port number and this connection port number, and is characterized by the aforementioned capacity specification means specifying clearance capacity using the information memorized by the pre-storage means based on the port number which the terminal unit accessed.

[Claim 5] The aforementioned gateway unit is a contents distribution system according to claim 4 characterized by having a means by which the manager can register the port number corresponding to the aforementioned clearance capacity into the aforementioned storage means.

[Claim 6] It is the contents distribution system according to claim 1 which two or more aforementioned gateway units are assigned for every aforementioned clearance capacity, respectively, and is characterized by the aforementioned capacity specification means specifying the aforementioned clearance capacity by the aforementioned gateway unit which the aforementioned terminal unit accessed.

[Claim 7] The aforementioned gateway unit is the contents distribution system of the claim 6 characterized by having a means by which a manager can register the clearance capacity of the aforementioned terminal unit connected for every gateway unit of this.

[Claim 8] The contents distribution system which consists of the contents server equipment which is characterized by providing the following, and which becomes the distribution origin of the contents connected to the trunk communications line, the gateway unit linked to a trunk communications line and a Local Area Network, access server equipment linked to a Local Area Network and two or more access lines, and two or more terminal units connected to the access line, and distributes contents to two or more terminals from contents server equipment via a trunk communications line, a gateway unit, a Local Area Network, access server equipment, and an access line. The aforementioned gateway unit is a capacity specification means to specify the clearance capacity of the aforementioned terminal unit. It is a distribution means to be equipped with a notice means to notify this clearance capacity to contents server equipment, and for contents server equipment to choose the contents which suited this clearance capacity by the

aforementioned clearance capacity notified from the gateway unit, and to distribute.

[Claim 9] It is the contents distribution system according to claim 8 characterized by the aforementioned capacity specification means specifying clearance capacity using the information memorized by the aforementioned storage means based on the account name acquired by the aforementioned account acquisition means by having the following. The aforementioned gateway unit is a means to memorize the clearance capacity of the aforementioned terminal unit corresponding to the account name and account name which are used when the aforementioned terminal unit connects with a gateway unit via an access line, access server equipment, and a Local Area Network. A means to acquire the account name used when this terminal unit connected from the IP address of the connected terminal unit.

[Claim 10] The account name used when the aforementioned terminal unit connects the aforementioned gateway unit with this gateway unit via an access line, access server equipment, and a Local Area Network, It has a means to memorize the clearance capacity of the terminal unit corresponding to an account name. the aforementioned access server equipment The account name used when this terminal unit connected from the IP address of the connected terminal unit is notified to the aforementioned gateway unit. the aforementioned capacity specification means The contents distribution system according to claim 8 characterized by specifying the aforementioned clearance capacity using the information memorized by the aforementioned storage means based on this account name.

[Claim 11] The aforementioned terminal unit is a contents distribution system according to claim 9 or 10 characterized by having the account name used when this terminal unit connects with a gateway unit via an access line, access server equipment, and a Local Area Network, and a means to register the clearance capacity of the terminal unit corresponding to an account name into the aforementioned storage means.

[Claim 12] The aforementioned access server equipment is a contents distribution system according to claim 8 characterized by having a means for it to be prepared according to clearance capacity and to memorize the IP address and the aforementioned clearance capacity of this access server equipment.

[Claim 13] The aforementioned gateway unit is a contents distribution system according to claim 12 characterized by having a means by which the manager can register the IP address of an access server, and the clearance capacity corresponding to the access server into the aforementioned storage means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the contents distribution system which transmits contents put on contents server equipment, such as a picture, voice, and a homepage, to an accepting station using a trunk communications line, a gateway unit, a Local Area Network, access server equipment, an access line, etc. It sets it as the main purposes to use it for the service which provides an accepting station with contents from contents server equipment through the Internet, intranet, etc. especially.

[0002]

[Description of the Prior Art] Drawing 13 is the block diagram showing the conventional contents distribution structure of a system. This distribution system is composition which consists of the contents server 101,102, a trunk communications line 103, Gateway (GW) equipment 104, Local Area Network (LAN) 105, the access server 106,107, the ISDN circuit 108, a GSTN circuit 109, and a terminal 110,111.

[0003] The terminal 110 which is an accepting station of contents is connected to contents server equipment 101,102 through the ISDN circuit 108, access server equipment 106, LAN105, GW equipment 104, and a trunk communications line 103, and the contents put on contents server equipment 101,102 are received. The terminal 111 which is an accepting station of contents is connected to contents server equipment 101,102 through the GSTN circuit 109, access server equipment 107, LAN105, GW equipment 104, and a trunk communications line 103, and the contents put on contents server equipment 101,102 are received.

[0004] A trunk communications line 103 is the Internet circuit which connects between providers, and the ISDN circuit 108 and the GSTN circuit 109 are used as an access line. The bandwidth of LAN105 is [the bandwidth of 64kbps(es) and the GSTN circuit 109 of the bandwidth of 128 or more kbpses and the ISDN circuit 108] 28.8kbps(es).

[0005] The example of the contents put on drawing 14 by contents server equipment 102 is shown. Contents 5000 are the dynamic images which can receive using the channel which has the bandwidth of 28.8 or more kbpses. Since the GSTN circuits 109 are 28.8kbps(es) and the ISDN circuit 108 is the bandwidth of 64kbps(es), either a terminal 110 or the terminal 111 of contents 5000 is ready-for-receiving ability.

[0006] Drawing 15 is a sequence diagram at the time of receiving the contents put on contents server equipment 102 regardless of the capacity and the channel of a terminal. A terminal 110,111 requires contents of contents server equipment 102 by GW equipment 104 course, and contents server equipment 102 transmits the demanded contents to a terminal 110,111 by GW equipment 104 course.

[0007] However, when receiving contents 5000 using the ISDN circuit 108 with the bandwidth of 64kbps, the margin for 35.2kbps(es) is in the capacity of a circuit at a pan. Generally dynamic-image data can expect improvement in quality of image by raising a bit rate. When the bandwidth of 64kbps(es) is used effectively, compared with the time of using the channel of the bandwidth of 28.8kbps, it becomes possible to transmit the dynamic image of higher quality of image. Then, in consideration of different bandwidth for every channel, the contents server equipment 101 of drawing 13 prepared two or more contents.

[0008] The example of the contents put on drawing 16 by contents server equipment 101 is shown. Contents 5000 are the same as what is placed with the contents server equipment 102 shown in drawing 13, and it is the dynamic image which can receive using the channel which has the bandwidth of 28.8 or more kbpses. Contents 5001 can be received using the channel which has the bandwidth of 64 or more kbpses, and contents 5002 can receive them using the channel which has the bandwidth of 128 or more kbpses. Although it is the same contents, it is the dynamic image of high definition [contents / 5000]. Thus, by preparing three kinds of contents, a terminal 110,111 can receive the dynamic-image contents of the highest quality of image in each circuit of the ISDN circuit 108 and the GSTN circuit 109.

[0009] Moreover, a terminal unit 110,111 can receive the contents corresponding to the bandwidth of the receiving capacity and circuit by dividing into two or more objects with GW equipment 104 the contents which divided contents into two or more objects with contents server equipment 101, or have been sent from contents server equipment 102, and transmitting.

[0010] In case contents server equipment 101 divides contents into an object, a means to add object attribute information to an object is established, and it adds attribute information, and transmits it to a terminal 110,111. Moreover, in case an object is transmitted, a means to judge the property of a channel, and a means to choose the object which transmits are established, and contents server equipment 101 chooses the object which transmits from the property of object attribute information and a channel, and is transmitted.

[0011] In this way, in case the object which transmits is chosen, when narrower than bandwidth required in order that the bandwidth of the channel to be used may transmit an object, it divides per object, and transmits in order, or contents server equipment 101 chooses only the object which can transmit, and is transmitted.

[0012] Moreover, when narrower than bandwidth required [when a means to detect the bandwidth which changes during communication is established and bandwidth changes during communication] in order that the bandwidth of a channel may transmit an object, it divides per object, and transmits in order, or contents server equipment 101 chooses only the object which can transmit, and is transmitted.

[0013] A terminal unit 110,111 is equipped with a means to notify the throughput to contents server equipment 101 or GW equipment 104, and when there is no capacity required in order to receive either of the objects at the time of contents transmission in an accepting station, the contents server 101 chooses only the object which can receive and transmits it.

[0014] Moreover, a terminal unit 110,111 is equipped with a means to notify the usable resource of the accepting station under communication to contents server equipment 101 or GW equipment 104, and when fewer than the resource which needs the resource of an accepting station in order to receive an object, contents server equipment 101 chooses only the object which can receive, and it transmits it.

[0015] Drawing 17 is a sequence diagram in the case of dividing contents into two or more objects, and transmitting with contents server equipment 101. A terminal 110,111 notifies the capacity to contents server equipment 101 by GW equipment 104 course, contents server equipment 101 returns Ack to a terminal 110,111 by GW equipment 104 course, a terminal 110,111 transmits the demand of contents to contents server equipment 101 by GW equipment 104 course, and contents server equipment 101 transmits the contents which suited the terminal 110,111 by the GW equipment 104 course.

[0016] Drawing 18 is a sequence diagram in the case of dividing into two or more objects with GW equipment the contents sent from contents server equipment, and transmitting. A terminal 110,111 notifies the capacity to GW equipment 104, and GW equipment 104 returns Ack to a terminal 110,111. Furthermore, the demand of contents is transmitted to contents server equipment 101 by GW equipment 104 course, and contents server equipment 101 transmits contents to GW equipment 104, and a terminal 110,111 divides GW equipment 104 into the contents suitable for the accepting station 110,111, and transmits the divided contents to a terminal 110,111. By any method, the function and sequence which a terminal 110,111 notifies that the capacity is to contents server equipment 101 or GW equipment 104 are needed.

[0017]

[Problem(s) to be Solved by the Invention] However, if the function which notifies the capacity in the end of a local is given to a terminal, it is necessary to carry the hardware and software which are processed for the reason, and terminal cost will become high. Moreover, since what has only poor performance, such as a cellular phone and a pager, to an accepting station is used, the processing which notifies the capacity of a terminal may become a big burden.

[0018] Without carrying out processing which notifies clearance capacity to a terminal unit, this invention specifies clearance capacity and aims at offering the contents distribution system which can distribute the contents which suit the capacity.

[0019]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, this invention is a contents distribution system which consists of the contents server equipment which becomes the distribution origin of the contents connected to the trunk communications line, a gateway unit linked to a trunk communications line and LAN, and two or more terminal units connected to LAN, and distributes contents to two or more terminal units via a trunk communications line, a gateway unit, and LAN from contents server equipment. And it is characterized by having equipped the aforementioned gateway unit with a capacity specification means to specify the clearance capacity of the aforementioned terminal unit, and a notice means to notify this clearance capacity to contents server equipment, and equipping the aforementioned contents server equipment with a distribution means to choose and distribute the

contents which suited this clearance capacity by the aforementioned clearance capacity notified from the aforementioned gateway unit.

[0020] The aforementioned gateway unit is equipped with a means to memorize the clearance capacity of the terminal corresponding to the IP address and this IP address which can specify a terminal within LAN, and the aforementioned capacity specification means is characterized by specifying clearance capacity using the information memorized by the pre-storage means based on the aforementioned IP address sent from the terminal unit. The aforementioned terminal unit may be equipped with a means to register the aforementioned IP address and the aforementioned clearance capacity into the aforementioned storage means.

[0021] The aforementioned gateway unit is equipped with a means to memorize the connection port assigned according to clearance capacity, and the aforementioned clearance capacity corresponding to this connection port number and this connection port number, and the aforementioned capacity specification means is characterized by specifying clearance capacity using the information memorized by the pre-storage means based on the port number which the terminal unit accessed. The aforementioned gateway unit may be equipped with a means by which the manager can register the port number corresponding to the aforementioned clearance capacity into the aforementioned storage means.

[0022] Two or more aforementioned gateway units are assigned for every aforementioned clearance capacity, respectively, and the aforementioned capacity specification means is characterized by specifying the aforementioned clearance capacity by the aforementioned gateway unit which the aforementioned terminal unit accessed. The aforementioned gateway unit may be equipped with a means by which a manager can register the clearance capacity of the aforementioned terminal unit connected for every gateway unit of this.

[0023] Moreover, this invention is a contents distribution system which consists of the contents server equipment which becomes the distribution origin of the contents connected to the trunk communications line, the gateway unit linked to a trunk communications line and LAN, access server equipment linked to LAN and two or more access lines, and two or more terminal units connected to the access line, and distributes contents to two or more terminals from contents server equipment via a trunk communications line, a gateway unit, LAN, access server equipment, and an access line. And it is characterized by having equipped the aforementioned gateway unit with a capacity specification means to specify the clearance capacity of the aforementioned terminal unit, and a notice means to notify this clearance capacity to contents server equipment, and equipping contents server equipment with a distribution means to choose and distribute the contents which suited this clearance capacity by the aforementioned clearance capacity notified from the gateway unit.

[0024] The aforementioned terminal unit the aforementioned gateway unit An access line, access server equipment, A means to memorize the clearance capacity of the aforementioned terminal unit corresponding to the account name and account name to be used when connecting with a gateway unit via LAN, It has a means to acquire the account name used when this terminal unit connected from the IP address of the connected terminal unit. the aforementioned capacity specification means It is characterized by specifying clearance capacity using the information memorized by the aforementioned storage means based on the account name acquired by the aforementioned account acquisition means.

[0025] The account name used when the aforementioned terminal unit connects the aforementioned gateway unit with this gateway unit via an access line, access server equipment, and LAN, It has a means to memorize the clearance capacity of the terminal unit corresponding to an account name. the aforementioned access server equipment The account name used when this terminal unit connected from the IP address of the connected terminal unit is notified to the aforementioned gateway unit, and the aforementioned capacity specification means is characterized by specifying the aforementioned clearance capacity using the information memorized by the aforementioned storage means based on this account name.

[0026] The aforementioned terminal unit may be equipped with the account name used when this terminal unit connects with a gateway unit via an access line, access server equipment, and LAN, and a means to register the clearance capacity of the terminal unit corresponding to an account name into the aforementioned storage means.

[0027] The aforementioned access server equipment is formed according to clearance capacity, and is characterized by having a means to memorize the IP address and the aforementioned clearance capacity of this access server equipment. The aforementioned gateway unit may be equipped with a means by which the manager can register the IP address of an access server, and the clearance capacity corresponding to the access server into the aforementioned storage means.

[0028] In this invention equipped with the above-mentioned composition, when GW equipment specifies the capacity of a terminal, GW equipment can notify the capacity of a terminal to a contents server, and a contents server can transmit the contents according to the capacity of a terminal. Moreover, by means by which GW equipment specifies clearance capacity, a user can only set up a terminal unit at once to GW equipment, and can use a terminal unit as usual except it. In this way, it is not necessary to carry like before a means to notify clearance capacity to a terminal unit, and

the contents united with a circuit or receiving capacity can be received by connecting with a contents server through GW equipment.

[0029]

[Embodiments of the Invention] Hereafter, the form of operation of this invention is explained, referring to a drawing.

[0030] Drawing 1 is the block diagram showing the contents distribution system concerning this invention. This distribution system consists of the contents servers 1 and 2, a trunk communications line 3, GW equipment 4, ISP (Internet Service Provider) 5 and LAN8, an ISDN circuit 12, a GSTN circuit 13, and terminal units 14-19. ISP5 consists of GW equipment 6, a management server 7, and LAN9 and AS (access server) 10 and 11.

[0031] The contents servers 1 and 2 are connected to the GW equipments 4 and 6 through the trunk communications line 3. GW equipment 4 is connected to terminals 14 and 15 through LAN (Local Area Network) 8. GW equipment 6 is connected with the management server 7 and AS 10 and 11 through LAN9. It connected with terminals 16 and 17 through the ISDN circuit 12, and AS10 has connected AS11 with terminals 18 and 19 through the GSTN circuit 13.

[0032] The contents server equipments 1 and 2 are the HTTP server which distributes the video servers (for example, VDO system server etc.) which distribute a dynamic image and voice, a Web page, etc., the FTP server which performs a file transfer, a WAP (Wireless Application Protocol) server used with a cellular phone. Trunk communications lines 3 are wide area networks, such as the Internet. GW equipment 4 connects LAN8 with a trunk communications line 3, sorts out the information which terminals 14 and 15 transmit to a trunk communications line 3 through LAN8, and the information which the contents server equipments 1 and 2 transmit to LAN8 through a trunk communications line, and transmits it. The terminals 14 and 15 connected to LAN8 are terminals which can connect with LAN8 and can receive the information from the contents server equipments 1 and 2, such as PC (Personal Computer), and HPC (Handheld Personal Computer), a Personal Digital Assistant.

[0033] In addition to this, it connects with access lines, such as a PHS circuit, a PDC circuit, ADSL (Asymmetric Digital Subscriber Line), and a cable modem, and ISP5 sorts out a trunk communications line 3, the ISDN circuit 12 and the GSTN circuit 13, the information that terminals 16-19 transmit to a trunk communications line 3 through an access line, and the information which the contents server equipments 1 and 2 transmit to 16-19 through a trunk communications line 3 in the connection nose-of-cam end of an access line, and transmits. Terminals 16-19 are PC, HPC, a Personal Digital Assistant, a cellular phone, etc., and it can connect with ISP5 through an access line, and they can receive the information from the contents server equipments 1 and 2.

[0034] By this system, the terminals 14 and 15 linked to LAN8 access contents server equipment 1, and composition in case contents server equipment 1 distributes contents to terminals 14 and 15 becomes like drawing 2. A terminal 14 is taken for an example and operation at this time is explained using drawing 3.

[0035] A terminal 14 notifies the contents demand 1000 to GW equipment 4 through LAN8. The information as which the contents demand 1000 specifies contents server equipment 1, the information which specifies the contents on contents server equipment 1, and the information which specifies a terminal 14 are included. When contents server equipment 1 is a HTTP server, the contents demand 1000 serves as URL of contents server equipment 1, and an IP address of a terminal 14.

[0036] If the contents demand 1000 is received from a terminal 14, GW equipment 4 will analyze the contents demand 1000, will analyze the information which specifies contents server equipment 1, and will notify the notice 2000 of capacity to contents server equipment 1 through a trunk communications line 3 to contents server equipment 1. The notices 2000 of capacity are the screen size of a terminal 14, the number of pixels, the color number, audio existence, the version of JAVA, performance, etc.

[0037] If the notice 2000 of capacity is received from GW equipment 4, contents server equipment 1 will notify Ack2001 to GW equipment 4, and will notify having received the notice 2000 of capacity to GW equipment 4. GW equipment 4 notifies the contents demand 3000 to contents server equipment 1. The contents information 3000 is information which specifies the contents which the terminal 14 required by the contents demand 1000. In KONTETSU specified by the contents demand 3000, the contents server equipment 1 which received the contents demand 3000 chooses the contents 5000 which suited the notice 2000 of capacity, and transmits them to GW equipment 4. GW equipment 4 transmits KONTEN 5000 transmitted from contents server equipment 1 to a terminal 14, and a terminal 14 receives the contents 5000 which suited.

[0038] Although operation of the system of composition of having been shown in drawing 2 is as above-mentioned, when the terminal 14 connected to LAN8 next accesses contents server equipment 1 and contents server equipment 1 distributes contents to a terminal 14, it describes three kinds (the 1st - the 3rd method) of how GW equipment 4 notifies the clearance capacity of a terminal 14.

[0039] The 1st method is a method of specifying the capacity of the terminal 14 which accessed GW equipment 4, by equipping GW equipment 4 with the table of an IP address and clearance capacity. The example of the table of an IP

address and clearance capacity is shown in drawing 4 . GW equipment 4 memorizes this table in the storage section. Here, IP addresses are a terminal linked to LAN8, and a number all devices, such as GW equipment 4, are numbered uniquely. GW equipment 4 can know the IP address of the notified terminal 14, can read a table from the storage section, and a terminal 14 can specify the clearance capacity corresponding to this IP address, if a contents demand is notified to GW equipment 4. And clearance capacity is notified to contents server equipment 1.

[0040] Thus, in order to make the table of an IP address and clearance capacity on GW equipment 4, you have to input the clearance capacity corresponding to the IP address into GW equipment 4 beforehand. The example which uses HTML is given as one of the methods of inputting an IP address and clearance capacity. A Web page is started by equipping GW equipment 4 with the function of a HTTP server. This Web page is described using HTML or XML, and this Web page can be displayed from every terminal connected to LAN8. The example of this Web page is shown in drawing 5 . A user inputs and registers the IP address of a terminal 14, and the capacity of a terminal 14 from this Web page. Thus, clearance capacity is notified to GW equipment 4, and GW equipment 4 can make and memorize the table of an IP address like drawing 4 , and clearance capacity.

[0041] The 2nd method is a method of specifying the capacity of a terminal by the connection port by having a connection port according to the capacity of a terminal in GW equipment 4. The example of the connection port number of GW equipment 4 and the table of clearance capacity is shown in drawing 6 . A connection port number is a number which can be specified in case a terminal gives connection and a notice to GW equipment 4 using TCP or UDP. The storage section of GW equipment 4 is made to memorize this table.

[0042] In GW equipment 4, clearance capacity is set up according to a connection port number. In drawing 6 , a screen size is 17 inches or more, the number of pixels is 1280x1024 or more, and the color numbers of the connection port of No. 11080 are [it is JAVA and] 24 bits or more, those with voice, and the connection port where the terminal beyond PentiumII 300MHz can connect performance. In a terminal 14, GW equipment 4 can know the capacity of a terminal by notifying the contents demand 1000 to GW equipment 4 using the connection port number which suited the capacity of a terminal.

[0043] The connection port number of GW equipment 4 and the table of clearance capacity are beforehand prepared by the manager of GW equipment 4. With which port number the user using a terminal 14 should just connect knows the information on a port number beforehand, and it must connect with the port number which suited the terminal on a user's responsibility. Moreover, the kind of clearance capacity needs to prepare many ports and that of being able to consider the combination of items, such as a screen size, the number of pixels, the color number, and voice, and making all combination correspond by the port number is not realistic. Then, some typical combination may be prepared as clearance capacity, and only the number may prepare a port number.

[0044] The 3rd method is the method of preparing GW equipment according to the capacity of a terminal. The composition in this method is shown in drawing 7 . Only the number of the kinds of clearance capacity prepares GW equipment which connects LAN8 with a trunk communications line 3 according to clearance capacity. Terminals 14 and 15 notify the contents demand 1000 to the GW equipments 4 and 41 which suited the capacity of terminals 14 and 15. If the contents demand 1000 is notified to the GW equipments 4 and 41, one kind of clearance capacity will be memorized by the GW equipments 4 and 41 at each, and they will be notified to contents server equipment 1 by considering this clearance capacity as the notice 2000 of capacity.

[0045] The manager of GW equipment performs which clearance capacity is assigned to which GW equipment. The user knows beforehand the IP address of GW equipment, and the information on clearance capacity, and with which GW equipment the user using a terminal should just connect must connect with GW equipment which suited the terminal on a user's responsibility.

[0046] Moreover, the kind of clearance capacity needs to prepare many GW equipments, and that of being able to consider the combination of items, such as a screen size, the number of pixels, the color number, and voice, and making all combination correspond with GW equipment is not realistic. Then, some typical combination may be prepared as clearance capacity, and only the number may prepare GW equipment.

[0047] Next, in the system of drawing 1 , composition in case terminals 16-19 make dial-up connection to ISP5 is shown in drawing 8 . Terminals 16 and 17 are connected to access server equipment 10 using the ISDN circuit 12. Similarly, terminals 18 and 19 are connected to access server equipment 11 using the GSTN circuit 13. The access server equipments 10 and 11 are connected to GW equipment 6 through LAN9. Moreover, management server equipment 7 is connected with GW equipment 6 and the access server equipments 10 and 11 through LAN9. GW equipment 6 is connected with contents server equipment 1 through a trunk communications line 3. For example, drawing 9 explains operation for which a terminal 16 receives the contents of contents server equipment 1 via the ISDN circuit 12, access server equipment 10, LAN9 and GW6, and a trunk communications line 3.

[0048] First, the sequence which a terminal 16 connects with ISP5 is explained. A terminal 16 is connected with access

server equipment 10 using the ISDN circuit 12. If it connects with the ISDN circuit 12, a terminal 16 will notify an account name and a password 6000 to access server equipment 10. An account name is a character string decided when a user contracts with ISP5. A password is a character string for checking whether it is the same as that of the user who the user who is using the account name made a contract of.

[0049] Here, it explains taking the case of a terminal 16. An account name and a password are managed with management server equipment 7. If an account name and a password 6000 are received from a terminal 16, access server equipment 10 will notify an account name and a password 6001 to management server equipment 7, and will ask management server equipment 7 authentication with an account name and a right password. When management server equipment 7 has an account name and a right password, the notice 6005 of connection permission is transmitted to access server equipment 10, and access server equipment 10 transmits the notice 6006 of connection permission to a terminal 16. When a terminal 16 receives the notice 6006 of connection permission, connection of ISP5 and a terminal 16 is completed. At this time, the IP address of a terminal 16 is determined and an IP address is notified to a terminal 16 through the notice 6006 of connection permission.

[0050] Next, a terminal 16 explains the sequence which receives contents from contents server equipment 1. A terminal 16 notifies the contents demand 1000 to access server equipment 10 through the ISDN circuit 12. The information as which the contents demand 1000 specifies contents server equipment 1, the information which specifies the contents on contents server equipment 1, and the information which specifies a terminal 16 are included. The information which specifies a terminal 16 in this is an IP address.

[0051] Here, there are three kinds (the 4th - the 6th method) of ways the GW equipment 6 in the case of using dial-up connection by this system specifies the capacity of a terminal 16, and they describe the 4th method first.

[0052] Access server equipment 10 will notify the contents demand 1001 to GW equipment 6, if the contents demand 1000 is received from a terminal. The contents demand 1001 is the same as that of the contents demand 1000. GW equipment 6 asks access server equipment 10 the account name of the user who uses a terminal 16. GW equipment 6 notifies IP address 1500 of a terminal 16 to access server equipment 10, and access server equipment 10 notifies the account name 1501 corresponding to an IP address to GW equipment 6.

[0053] GW equipment 6 has memorized the table of an account name like drawing 10, and clearance capacity, and notifies the clearance capacity corresponding to the account name to contents server equipment 1 as notice 2000 of capacity. Clearance capacity can include the band of a circuit etc. according to the capacity of the terminal itself managed by drawing 10, and the circuit grade for a terminal connecting with access server equipment. This is the 4th way GW equipment 6 specifies the capacity of a terminal.

[0054] The example which uses HTML is explained as one of the methods of inputting account and clearance capacity to GW equipment 6. First, a Web page is started by equipping GW equipment 6 with the function of a HTTP server. This Web page is described using HTML and this Web page can be displayed from every terminal connected to LAN9. As an example of this Web page, that to which the portion of the IP address of a terminal is accounted is mentioned in the clearance-capacity setting screen shown in drawing 5. When a user inputs account of a terminal 16, and the capacity of a terminal 16 from this Web page, clearance capacity is notified to GW equipment 6, and GW equipment 6 makes the table of account like drawing 10, and clearance capacity, and memorizes it in the storage section.

[0055] If the notice 2000 of capacity is received from GW equipment 6, contents server equipment 1 will notify Ack2001 to GW equipment 6, and will notify having received the notice 2000 of capacity to GW equipment 6. GW equipment 6 notifies the contents demand 3000 to contents server equipment 1. The contents information 3000 is information which specifies the contents which the terminal 14 required by the contents demand 1001. In the contents specified by the contents demand 3000, the contents server equipment 1 which received the contents demand 3000 chooses the contents 5000 which suited the notice 2000 of capacity, and transmits them to GW equipment 6. GW equipment 6 transmits the contents 5000 transmitted from contents server equipment 1 to a terminal 14 by access server equipment 10 course, and a terminal 14 receives the contents 5000 which suited the terminal 14.

[0056] How [5th] GW equipment in the case of connecting with access server equipment using dial-up connection by this system specifies the capacity of a terminal is described. In drawing 9, drawing 11 explains the method for skipping the procedure in which GW equipment 6 asks the account name of a terminal 16.

[0057] The access server equipment 10 which received the contents demand 1000 from the terminal 16 notifies the contents demand 1001 to GW equipment 6. By including the information which specifies contents server equipment 1, the information which specifies the contents on contents server equipment 1, and the account name of a terminal 16, without asking access server equipment 10 an account name, GW equipment 6 can specify the account name of a terminal 16 as this contents demand 1001, and can specify the clearance capacity of a terminal 16 as it. The method as the example which uses HTML stated by the 4th method of specifying the capacity of a terminal with GW equipment same as a method of inputting account and clearance capacity can be used to GW equipment.

[0058] How [6th] GW equipment in the case of connecting with access server equipment using dial-up connection by this system specifies the capacity of a terminal is described. GW equipment 6 specifies clearance capacity by preparing access server equipment according to the capacity of a terminal, and connecting a terminal to the access server equipment which suited clearance capacity. Only the number of the kinds of clearance capacity prepares the access server equipment which connects a terminal with LAN9 according to clearance capacity.

[0059] As shown in drawing 8 , terminals 16-19 are accessed and connected to the access server equipments 10 and 11 which suited clearance capacity. If it sees from a terminal, the change of connection with the access server equipments 10 and 11 should just change the telephone number. That is, access server equipment 10 and the different telephone number for every 11 are prepared, and terminals 16-19 are connected to the access server equipments 10 and 11 which suit clearance capacity by using the telephone number of the access server equipments 10 and 11 which suit clearance capacity. For example, a terminal 16 transmits the contents demand 1000 to access server equipment 10, and access server equipment 10 transmits the contents demand 1001 to GW equipment 6. The IP address of access server equipment 10 is included in the contents demand 1001. GW equipment 6 has memorized the IP address of access server equipment like drawing 12 , and the table of clearance capacity in the storage section, and notifies them to contents server equipment 1 by considering clearance capacity corresponding to access server equipment 10 as the notice 2000 of capacity.

[0060] Since the clearance capacity connected for every access server equipment is decided when this method is used, as a method of inputting clearance capacity, how the manager inputs the IP address and clearance capacity of the access server equipments 10 and 11 can be beforehand used to GW equipment 6. That is, a manager will input the IP address and clearance capacity of the access server equipments 10 and 11 as shown by drawing 12 to GW equipment 6 beforehand.

[0061] Moreover, the kind of clearance capacity needs to prepare many access server equipments, and that of being able to consider the combination of items, such as a screen size, the number of pixels, the color number, and voice, and making all combination correspond with access server equipment is not realistic. Then, some typical combination may be prepared as clearance capacity, and only the number may prepare access server equipment.

[0062] The sequence when seeing from a terminal in any [of this system] case becomes the same as the conventional sequence. When it sees from a terminal, the conventional sequence transmits the contents demand 1000 and only receives contents 5000. If any sequence of this system is seen from a terminal, it can transmit a contents demand, can only receive contents, and can use the conventional terminal as it is as a function of a terminal.

[0063]

[Effect of the Invention] According to this invention, the function which the terminal has from the former when GW equipment manages the bandwidth of a terminal or a circuit is used. Or by registering the receiving capacity of a terminal into GW equipment beforehand It is not necessary to add the new function in which receiving capacity is told to a contents server to a terminal, and the contents united with a circuit or receiving capacity can be received by connecting with a contents server through above GW equipment.

[0064] It becomes unnecessary to carry from this the new hardware and new software for carrying out processing which notifies the capacity of a terminal to a terminal. Moreover, the contents corresponding to clearance capacity can be received, without not needing the processing which notifies the capacity of a terminal but applying a new burden to a terminal, even if a terminal has only poor performance and poor resources, such as a cellular phone and a pager.

[Translation done.]

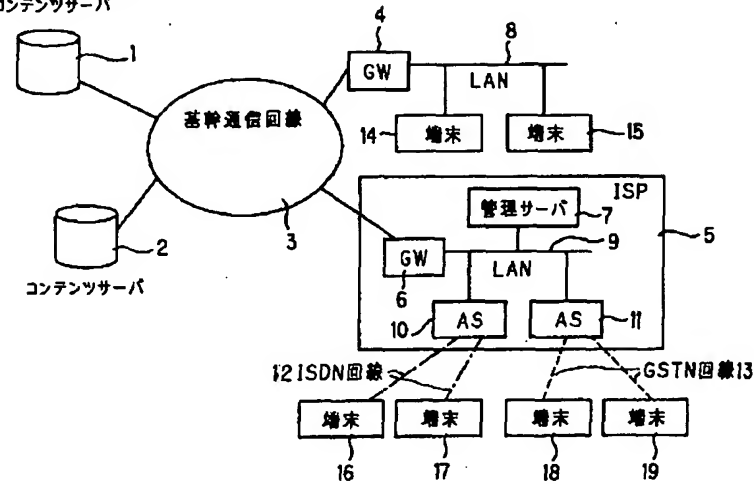
* NOTICES *

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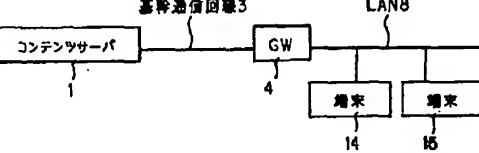
- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DRAWINGS

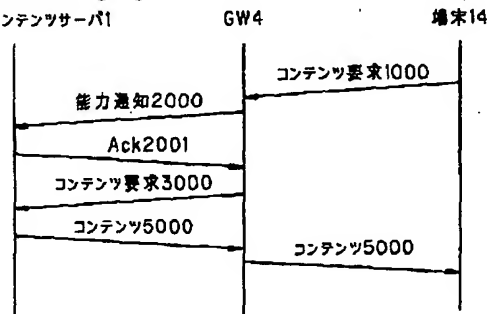
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Drawing 4]

IP アドレス	端末能力						
	画面サイズ	画素数	色数	音声	JAVA	パフォーマンス	...
192.8.40.23	17インチ	1280x1024	24bit	あり	あり	Pentium II 300MHz	...
192.8.40.57	15インチ	1024x768	16bit	あり	なし	Pentium 100MHz	...
:	:	:	:	:	:	:	:

[Drawing 5]

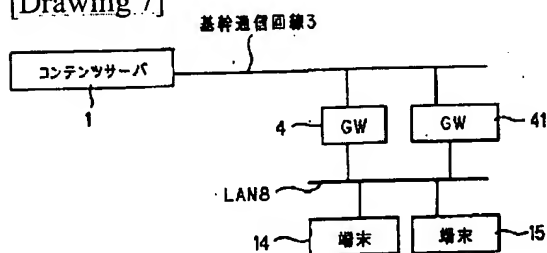
130

端末能力設定画面	
端末 IP アドレス (異なる場合は設定してください)	192.8.40.23
画面サイズ	17インチ
画素数	1280x1048
色数	24bit
音声	16bit ステレオ
JAVA	Ver.2.0
パフォーマンス	Pentium II 300MHz

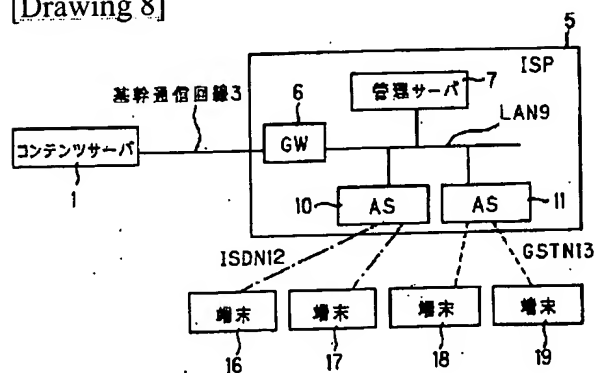
[Drawing 6]

GWの ポート番号	端末能力						
	画面サイズ	画素数	色数	音声	JAVA	パフォーマンス	...
11080	17インチ	1280x1024	24bit	あり	あり	Pentium II 300MHz	...
12080	15インチ	1024x768	16bit	あり	なし	Pentium 100MHz	...
:	:	:	:	:	:	:	:

[Drawing 7]



[Drawing 8]



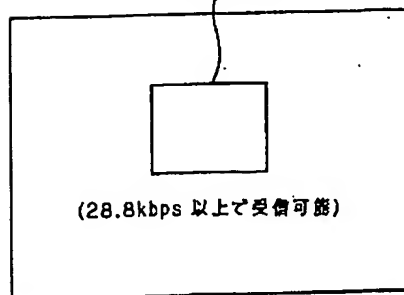
[Drawing 10]

190

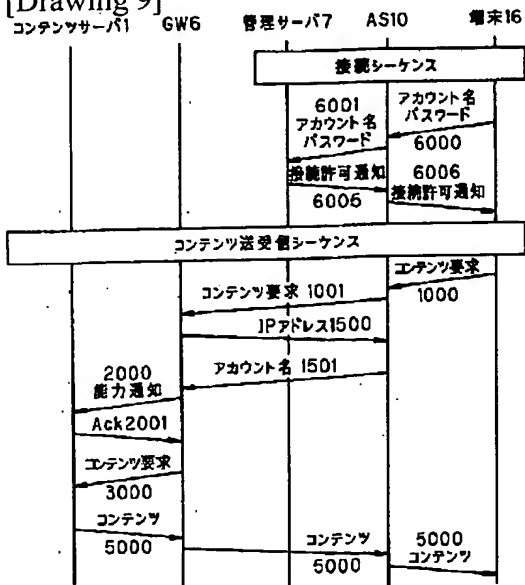
アカウント名	末 端 力							
	アクセス回線	画面サイズ	画素数	色数	音声	JAVA	パフォーマンス	...
taro	ISDN64K	17インチ	1280×1024	24bit	あり	あり	Pentium II 300MHz	...
hanako	PHS32K	4インチ	1024×768	2bit	なし	なし	モバイル用	...
:	:	:	:	:	:	:	:	:

[Drawing 14]

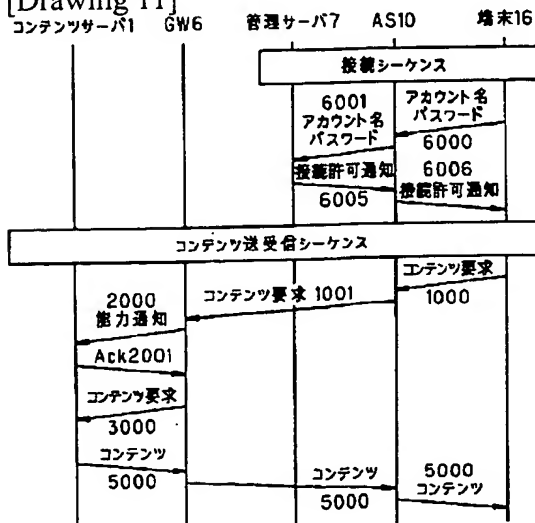
コンテンツ5000



[Drawing 9]



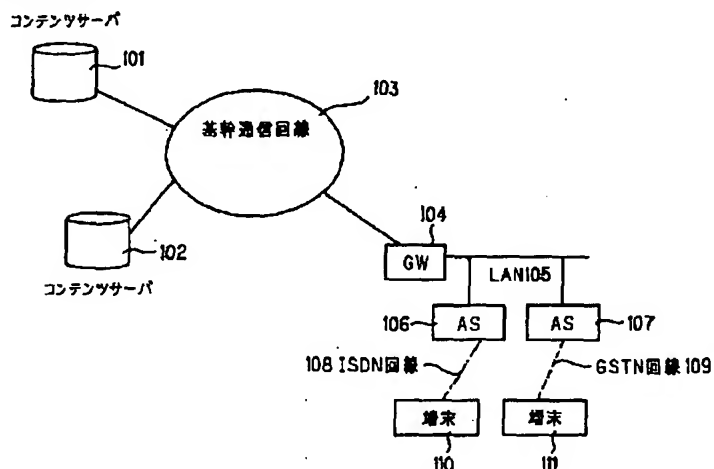
[Drawing 11]



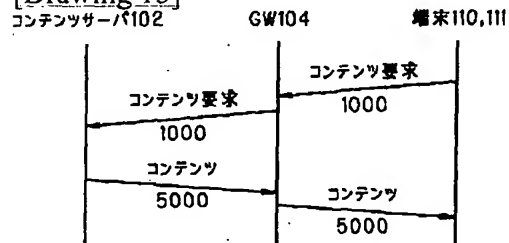
[Drawing 12]

ASの IP アドレス	端末能力								
	アクセス回線	画面サイズ	画素数	色数	音声	JAVA	パフォーマンス	...	
92.9.34.22	ISDN64K	17インチ	1280×1024	24bit	あり	あり	Pentium II 300MHz	...	
92.9.34.23	PHS32K	4インチ	1024×768	2bit	なし	なし	モバイル用	...	
:	:	:	:	:	:	:	:	:	

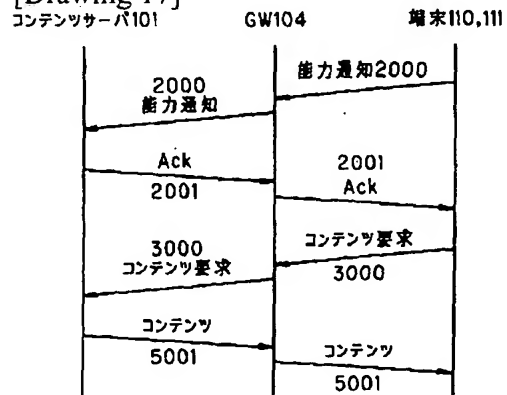
[Drawing 13]



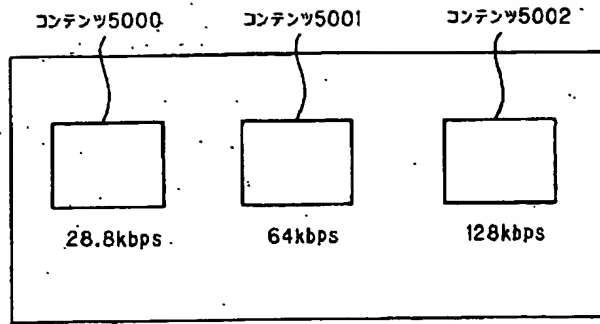
[Drawing 15]



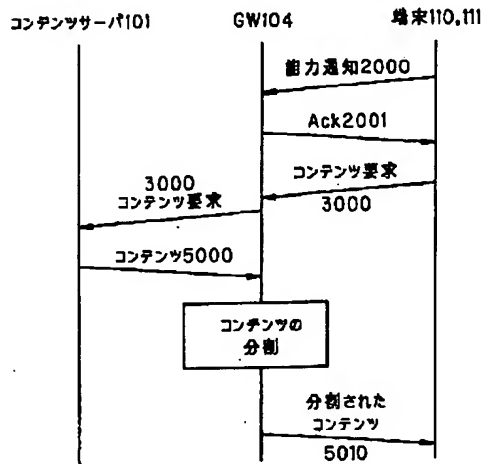
[Drawing 17]



[Drawing 16]



[Drawing 18]



[Translation done.]